

What is claimed is:

1. An embolic protection sheath, comprising:
  - an elongate shaft having a proximal end and a distal end, and a lumen extending therethrough;
  - 5 a coil assembly including a first coil defining a lumen, the first coil being wound in a first direction and second coil wound in a second direction, the second coil being disposed around the first coil; and
  - wherein the coil assembly is attached to the distal end of the shaft, and the lumen of the shaft is fluid communication with the lumen of the first coil.

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2. The sheath in accordance with claim 1, wherein the first coil is multifilar.

3. The sheath in accordance with claim 1, wherein the second coil is multifilar.

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4. The sheath in accordance with claim 1, wherein the first and second coils are multifilar.

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5. The sheath in accordance with claim 1, wherein the first coil includes a wire having a circular cross section.

6. The sheath in accordance with claim 1, wherein the second coil includes a wire having a circular cross section.

7. The sheath in accordance with claim 1, wherein the first and second coils including wires having circular cross sections.

5 8. The sheath in accordance with claim 1, wherein the first coil includes a wire having a generally rectangular cross section.

9. The sheath in accordance with claim 1, wherein the second coil includes a wire having a generally rectangular cross section.

10 10. The sheath in accordance with claim 1, wherein the first and second coils include wires having generally rectangular cross sections.

11. The sheath in accordance with claim 1, wherein the coil assembly includes a proximal taper.

15 12. The sheath in accordance with claim 1, wherein the coil assembly is coated with a polymer.

20 13. The sheath in accordance with claim 1, wherein the coil assembly is heat bonded to the shaft.

14. The sheath in accordance with claim 1, wherein the first coil includes a polymer coated wire.

15. The sheath in accordance with claim 1, wherein the second coil includes a polymer coated wire.

16. An embolic protection sheath, comprising:

5 an elongate shaft having a proximal end and a distal end, and a lumen extending therethrough;  
a coil assembly including a first coil defining a lumen, the first coil being wound in a first direction and second coil wound in a second direction, the second coil being disposed around the first coil;

10 wherein the coil assembly is attached to the distal end of the shaft, and the lumen of the shaft is fluid communication with the lumen of the first coil; and an embolic protection device including an elongate wire and a filter attached thereto, wherein the wire is disposed at least in part in the shaft lumen.

15 17. The sheath in accordance with claim 16, wherein the first coil is multifilar.

18. The sheath in accordance with claim 16, wherein the second coil is multifilar.

20 19. The sheath in accordance with claim 16, wherein the first and second coils are multifilar.

20. The sheath in accordance with claim 16, wherein the first coil includes a wire having a circular cross section.

5 21. The sheath in accordance with claim 16, wherein the second coil includes a wire having a circular cross section.

22. The sheath in accordance with claim 16, wherein the first and second coils including wires having circular cross sections.

10 23. The sheath in accordance with claim 16, wherein the first coil includes a wire having a generally rectangular cross section.

24. The sheath in accordance with claim 16, wherein the second coil includes a wire having a generally rectangular cross section.

15 25. The sheath in accordance with claim 16, wherein the first and second coils include wires having generally rectangular cross sections.

20 26. The sheath in accordance with claim 16, wherein the coil assembly includes a proximal taper.

27. The sheath in accordance with claim 16, wherein the coil assembly is coated with a polymer.

28. The sheath in accordance with claim 16, wherein the coil assembly is heat bonded to the shaft.

5 29. The sheath in accordance with claim 16, wherein the first coil includes a polymer coated wire.

30. The sheath in accordance with claim 16, wherein the second coil includes a polymer coated wire.

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31. An embolic protection sheath, comprising:  
a coil assembly including a first coil defining a lumen, the first coil being wound in a first direction and second coil wound in a second direction, the second coil being disposed around the first coil;

15 wherein the coil assembly is attached to the distal end of the shaft, and the lumen of the shaft is fluid communication with the lumen of the first coil; and an embolic protection device including an elongate wire and a filter attached thereto, wherein the wire is disposed at least in part in the shaft lumen.

20 32. The sheath in accordance with claim 31, wherein the first coil is multifilar.

33. The sheath in accordance with claim 31, wherein the second coil is multifilar.

34. The sheath in accordance with claim 31, wherein the first and second coils are multifilar.

5 35. The sheath in accordance with claim 31, wherein the first coil includes a wire having a circular cross section.

36. The sheath in accordance with claim 31, wherein the second coil includes a wire having a circular cross section.

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37. The sheath in accordance with claim 31, wherein the first and second coils including wires having circular cross sections.

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38. The sheath in accordance with claim 31, wherein the first coil includes a wire having a generally rectangular cross section.

39. The sheath in accordance with claim 31, wherein the second coil includes a wire having a generally rectangular cross section.

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40. The sheath in accordance with claim 31, wherein the first and second coils include wires having generally rectangular cross sections.

41. The assembly in accordance with claim 31, wherein the coil assembly includes a first diameter section and a second diameter section having a diameter greater than the first diameter section.

5 42. The sheath in accordance with claim 31, wherein the coil assembly is coated with a polymer.

43. The sheath in accordance with claim 31, wherein the first coil includes a polymer coated wire.

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44. The sheath in accordance with claim 31, wherein the second coil includes a polymer coated wire.